Software
What SW can provide:

- Plans, architecture, and status of current applied R&D plan for delivered components
- Clear explanations for why something is very hard (you won’t get it)
SW: Want from Apps

• More, more, more
• Evolve App Inventory:
  • Not just ascii text about app, but Real Code
  • Compact / Skeleton apps with instructions
  • Expected performance model for code
  • Quantify some of the questions from the Inventory
  • Taxonomy of main algorithms
  • Programming Models
    – How is performance monitored?
    – How will failures be handled?
    – How will reproducibility and correctness be handled?
SW: Want from Hardware

• Fault model, detection, probabilities
• Power effects (what can we do to change usage?)
• How do we manage parallelism?
• Cost of context switching?
• Resource management knobs
  – Bandwidth
  – Scheduling
  – Power
• Model for heterogeneity: SW and HW
• Solid state plans
  – Size, parameters, etc
Continuing Software Installation Surveys

• Goal: Better understanding based on data instead of anecdotes
• Usage, not just installation
• Focus on Extreme Scale
• Do automated collection? With scale info?
• Types of systems: compute, data, analysis
• Improved schema
We agree, so now a plan to do it!